**THE PENDING CLAIMS:**

1-10. (Canceled)

11. (Previously Presented) A method of producing fibroblasts, comprising:

obtaining embryonic stem cells;

culturing the embryonic stem cells to induce formation of embryoid bodies;

isolating the embryoid bodies;

casting the embryoid bodies in a three-dimensional scaffolding material and a cell culture medium, wherein the three-dimensional scaffolding material is a gel; and

growing the embryoid bodies embedded in the three-dimensional scaffolding material and in the cell culture medium, thereby inducing differentiation of the embryoid bodies to produce substantially homogenous populations of fibroblasts.

12. (Previously Presented) The method of claim 11, wherein the inducing comprises adding a cytokine to the three-dimensional embryoid body culture.

13. (Original) The method of claim 12, wherein the cytokine is vascular endothelial growth factor (VEGF); vascular permeability factor (VPF); members of the fibroblast growth factor family (FGF); members of the interleukin family (IL-1α, and -1β, -2, -3, -4, -5, -6, -7, -8, -9,-10,-11,-12,-13,-14,-15,-16,-17 or -18); epidermal growth factor (EGF); platelet-derived growth factor (PDGF); platelet-derived endothelial cell growth factor (PD-ECGF); transforming growth factors alpha and beta (TGF-α, TGF-β); tumor necrosis factor alpha (TNF α); hepatocyte growth factor (HGF); granulocyte-macrophage colony stimulating factor (GMCSF); insulin growth factor-1 (IGF-1); angiogenin; angiotropin; fibrin, nicotinamide; macrophage inflammatory protein (MIP); macrophage migration inhibiting factor (MIF); granulocyte stimulating factor (GCSF); macrophage stimulating factor (MCSF); endothelial cell growth factor (ECGF); members of the interferon family (IFNs); members of the insulin-like growth factor family (IGF-I and IGF-II); nerve growth factor (NGF); members of the neurotrophin family (NTs); members of the selectin family; intercellular adhesion molecule (ICAM); platelet

vascular cell adhesion molecule (PECAM); vascular cell adhesion molecule (VCAM); calcitonin, mediators, hormones or hirudin.

14. (Original) The method of claim 13, wherein the cytokine is transforming growth factor beta (TGF-β); fibroblast growth factor (FGF); or interleukin 4 (IL-4).

15. (Previously Presented) The method of claim 12, wherein the inducing further comprises adding a cell culture medium comprising about 2% fetal bovine serum.

16. (Previously Presented) The method of claim 11, further comprising:
extracting the fibroblasts from the three-dimensional scaffolding material; and
culturing the fibroblasts in monolayer culture.

17. (Previously Presented) The method of claim 16, wherein the extracting is performed by digesting the three-dimensional scaffolding material and by centrifugation.

18. (Previously Presented) The method of claim 16, wherein the monolayer culture includes about 10% fetal bovine serum.

19. (Previously Presented) The method of claim 12, wherein the inducing includes adding FGF, TGF-b1 or IL-4 to the medium.